



STATE OF UTAH  
NATURAL RESOURCES & ENERGY  
Oil, Gas & Mining

Scott M. Matheson, Governor  
Temple A. Reynolds, Executive Director  
Cleon B. Feight, Division Director

4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

March 10, 1983

Mr. Delbert D. Thomas  
Shale Development Corporation  
P.O. Box 44  
Redlands, California 92373

RE: Shale Development Corporation  
Sand Wash Mine  
ACT/047/005  
Uintah County, Utah

Dear Mr. Thomas:

The Division of Oil, Gas and Mining has made an in depth evaluation of the Sand Wash Mine proposal and Shale Development's answers to the preliminary review made to determine compliance with the Utah Mined Land Reclamation Act of 1975, Title 40-8, Utah Code Annotated 1953. There are still some concerns which we believe have not been addressed adequately in the mine plan or in the response to our preliminary review. We currently plan to present the Sand Wash Mine Proposal to the Board on March 24, 1983, for tentative approval. However, final approval will be withheld until all concerns and stipulations have been resolved and the approved reclamation bond has been posted.

One general observation can be made about the format of the application. Difficulties and delays in the review process were caused by staff members having to sift through various letters and earlier submissions in order to determine the adequacy of the plan. It is highly recommended that when the applicant begins to prepare the mine plan for the projected larger scale operations, that a meeting be held with the Division staff to discuss guidelines and formats. Such meetings are invaluable in expediting staff reviews of modifications and new submittals.

The following is a list of the concerns and stipulations which need to be resolved or committed to prior to Shale Development receiving final approval.

CONCERNS

Rule M-3 (2)(f)

Some clarification is needed on the reclamation schedule as shown on Exhibit "C". Item number 2 does not show up on the schedule. Items 11, 12 and 13 are not defined in the schedule. Is reseeding to take place in the spring or in the fall?

Mr. Delbert D. Thomas  
March 10, 1983  
ACT/047/005  
Page 2

Rule M-3 (3)

More clarification is needed in this area. How will the excavation of material be accomplished? What type of equipment will be used? Will any part of the excavation require the use of explosives? If so how and where will explosives be stored?

Rule M-10 (12)

The development of a successful revegetation plan is linked (by the applicant) to the use of test plots to identify necessary land treatments. These should be coordinated with the identification of important soils variables and their manipulation. Such factors as soil fertility amendments, soil replacement depths and the use of spent shale ("processing waste") as fill should be evaluated. Due to the apparently high salinity of processed shale, the potential for upward salt migration and its mitigation should be included in this test plot program.

What reason is there to assume that an adverse impact due to grazing will not occur?

Rule M-10 (14)

With regard to soil sampling, were composite samples taken? How many separate samples were analyzed? The electrical conductivity (EC) was reported at 1.6. Is this expressed as mmhos/cm? If so, it appears unrealistically low. Please redo this analysis and submit the results.

Please provide additional details on the scarification methods and implements to be used in the preparation of areas to be reclaimed.

STIPULATIONS

Stipulation 3-9-83-1 CY

Rule M-3 (2)(d)

A plan map must be submitted which shows post-mining contours for the area of disturbance. This will be an after reclamation map showing what the final proposed land contours will be.

Stipulation 3-9-83-2 TP

Rule M-10 (5)

The applicant states that "it is not anticipated that any highwalls will be generated." A commitment should be made that if any highwalls are generated, the operator will notify the Division and arrive at an approved plan for their mitigation.

Mr. Delbert D. Thomas  
March 10, 1983  
ACT/047/005  
Page 3

Stipulation 3-9-83-3 TP

Rule M-10 (6)

Due to the high salinity, high pH and the general nature of the "processing waste" material, it is necessary that additional analyses be made. Such tests should include the content of sodium, calcium, magnesium, potassium, selenium and molybdenum, expressed as ppm or mg/l. The applicant shall commit to running these tests during the first months of operation and submitting the information in the requested form to the Division.

It is believed that since these materials will be used as fill and have a direct interface with the redistributed topsoil, the above information will be of value.

Stipulation 3-9-83-4 SL

Rule M-10 (12)

The applicant shall commit to submitting detailed test plot designs and monitoring practices to DOGM at least thirty (30) days prior to test plot implementation on retorted shale.

Stipulation 3-9-83-5 SL

Rule M-10 (12)

The applicant shall commit to submitting a final revegetation plan, as described in the Division's letter of December 13, 1983, under section M-10 (12), at least sixty (60) days prior to any final reclamation occurring on spent shale or fill banks.

Stipulation 3-9-83-6 SL

Rule M-10 (12)

The applicant still needs to discuss reseeding of fill banks as requested in the Division's letter of December 13, 1983. Will revegetation take place as described in Exhibit E or will test plots determine revegetation along fill banks?

Stipulation 3-9-83-7 TP

Rule M-10 (14)

A soil isopach map should be developed to assist in soil removal activities. This should be based on the data submitted in Exhibit F.

Stipulation 3-9-83-8 TP

Mr. Delbert D. Thomas  
March 10, 1983  
ACT/047/005  
Page 4

Rule M-10 (14)

A soils balance sheet should be prepared and submitted to the Division for review. As a basis for such a balance sheet it appears from the data submitted that the applicant has approximately four inches of available material for reclamation. As an example this would mean (4 inches X 5 acres X 43,560 ft<sup>2</sup>/ac) or approximately 2,662 cubic yards of soil. Details for such a balance sheet or any other soils problems can be worked out with Tom Portle of the Division staff.

Based on the above approximation, it appears that "soils protection and storage" should be fully addressed by the applicant. This was originally requested in the Division's letter of December 13, 1983.

Stipulation 3-9-83-9 TP

Rule M-10 (14)

A soils map depicting all areas which will receive topsoil and to what depth, during reclamation, should be prepared and submitted to the Division. this will also aid the applicant in assuring the proper soil redistribution.

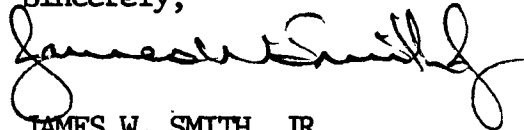
Stipulation 3-9-83-10 TP

Rule M-10 (14)

The applicant shall commit to testing soils after redistribution to assess the needs for fertility amendments. This analysis should include the parameters as outlined in the December 13, 1983 review letter.

If you have any questions about any of the above concerns or stipulations please contact me or Cy Young of my staff. You should also get in touch with Pam Grubaugh-Littig of the Division staff to discuss the form and amount of reclamation surety to be posted.

Sincerely,



JAMES W. SMITH, JR.  
COORDINATOR  
MINE LAND RECLAMATION

JWS/CJY:lm

cc: Cy Young, DOGM  
Tom Portle, DOGM  
Pam Grubaugh-Littig, DOGM  
Wayne Hedberg, DOGM  
Sue Linner, DOGM  
Ron Daniels, DOGM